ABSTRACT

A system for estimating an acceleration of a motion of an accelerometer itself that is generated by a motion of a robot 1, using amounts of motional states of the robot, including a desired motion of a desired gait, a detected value of a displacement of a joint, and a desired value of the displacement of the joint of the robot 1 having a gyro sensor (angular velocity sensor) and an accelerometer installed on a body 3 or the like thereof, and for estimating an actual posture of a predetermined part, such as the body 3, on the basis of the acceleration of the motion, the detected acceleration value of the accelerometer, and the angular velocity detected value of the angular velocity sensor. An error of the estimated value of the actual posture of the predetermined part is estimated on the basis of a difference between the detected acceleration value and the motional acceleration, and then an input of an integrating means for integrating angular velocity detected values is corrected to bring the aforesaid error close to zero so as to obtain an output of the integrating means as an estimated value of the actual posture. Thus, an actual posture of a predetermined part is accurately estimated.